ANCIENT EGYPT

1927. MARCH. PART I.

CONTENTS.

1. EGYPT OVER THE BORDER.
FLINDERS PETRIE.
2. A GRAECO-ROMAN APIS.
L. B. ELLIS.
3. THE COPTIC MUSEUM IN CAIRO.
G. P. SOBHY.
4. SMALL OBJECTS FROM NAQADEH.
FLINDERS PETRIE.
5. NOTE ON PARABOLIC CONES.
R. W. SLOLEY.
6. MARKING-INK IN ANCIENT EGYPT.
C. AINSWORTH MITCHELL.
7. THE SISTRUM OF ISIS.
L. B. ELLIS.
8. REVIEWS:
FISHING FROM THE EARLIEST TIMES.
LA MAGIE DANS L'ÉGYPTE ANTIQUE.
ETC.
9. JOURNALS:
ZEITSCHRIFT FÜR AGYPTISCHE SPRACHE.
10. NOTES AND NEWS.

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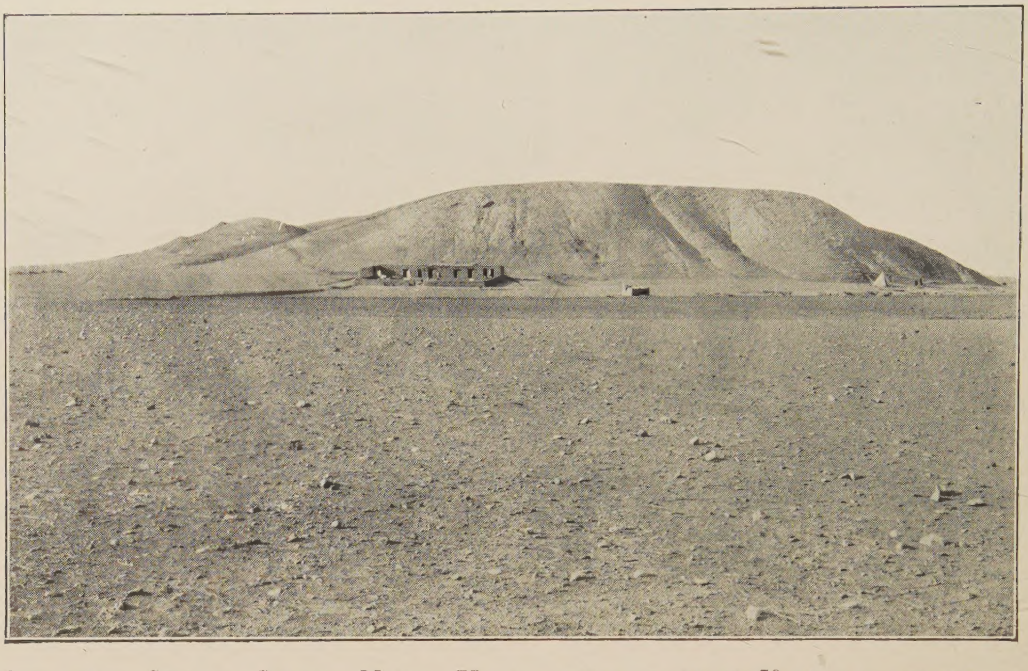
YEARLY, 7*s*. POST FREE. QUARTERLY PART, 2*s*.

BRITISH SCHOOL OF ARCHAEOLOGY IN EGYPT.
MACMILLAN AND CO., LONDON
AND NEW YORK.

ANCIENT EGYPT. Net price of each number from booksellers is 2*s*.

Subscriptions for the four quarterly parts, prepaid, post free, 7*s*., or 2 dollars, are received by Hon. Sec. "Ancient Egypt" (H. Petrie), University College, Gower Street, London, W.C. 1.

Books for review, papers offered for insertion, or news, should be addressed:—
Editor of "Ancient Egypt,"
University College, Gower Street, London, W.C. 1.



South-east Side of Gerar; Mound 75 feet high, of which 50 feet is formed of Ruined Towns. Row of Excavation Huts at the Foot.

View West from Mound, looking into Arab Tents and Huts; illustrating how Abimelech saw the Life of Isaac and Rebekah from his Palace Window.

ANCIENT EGYPT.

EGYPT OVER THE BORDER.

WORK OF THE BRITISH SCHOOL OF ARCHAEOLOGY IN EGYPT.

THE choice of a site for excavation is always an anxious matter. There are, first, the possibilities in the known history to be reckoned; then the surface examination, and the various objects which are known to have come from a site; then the amount of late material which may have to be removed before results can be reached; moreover, all the facilities for work must be taken into account, such as labour supply, water supply, ownership of land, residence, obstructions official and local, European staff available, and money sufficient for the scale of work needed. On the decision rests the produce of a whole year of life of several eager workers, and the right use of some thousands of pounds. Every year's decision is, therefore, a serious risk.

Starting to work under fresh conditions of country and of diggers, makes even more uncertainty, and it was not until some search was made around Gaza that at last my decision was for Tell Jemmeh. With regard to the general region, our purpose was to be in touch with the Egyptian rule in Syria, for the sake of linking the history with that of Egypt, and for finding Egyptian objects which would serve for dating the Palestinian products. Gaza itself was not suitable for work, as the Roman town, and the Arab, cover the site; on the modern cemetery ground, Roman material was found down to the original field level. The old walls of Canaanite and Egyptian times, thirty-two feet high, are visible at one edge, but the modern fields lie high above the top of the wall. Moreover, the "dead hand" of the *wakf* holds that land, and negotiations would be tedious before working. South of Gaza is Tell Ajjul, near the old coast road, and on the Wady Ghuzzeh. That site is pre-Jewish, but it has only a few feet of soil on the top of a natural hill, and no walls visible.

Further inland up the Wady Ghuzzeh stands Tell Jemmeh, about nine miles south of Gaza. Though a few miles from the coast road, it is on the line from the hill country down to Egypt, the natural track of an eastern invader. It is a high hill, rising from the plain about seventy-five feet, of which fifty feet was the thickness of the town ruins, and there was no Roman or late Greek pottery upon it. Nor was there any Muslim sanctuary or cemetery to be avoided. There was not any part of it cultivated, or enclosed as private land. The slopes around it were steep, and suitable for down-throw of the clearances. It had all the prospects of age and the conveniences for work that we could seek.

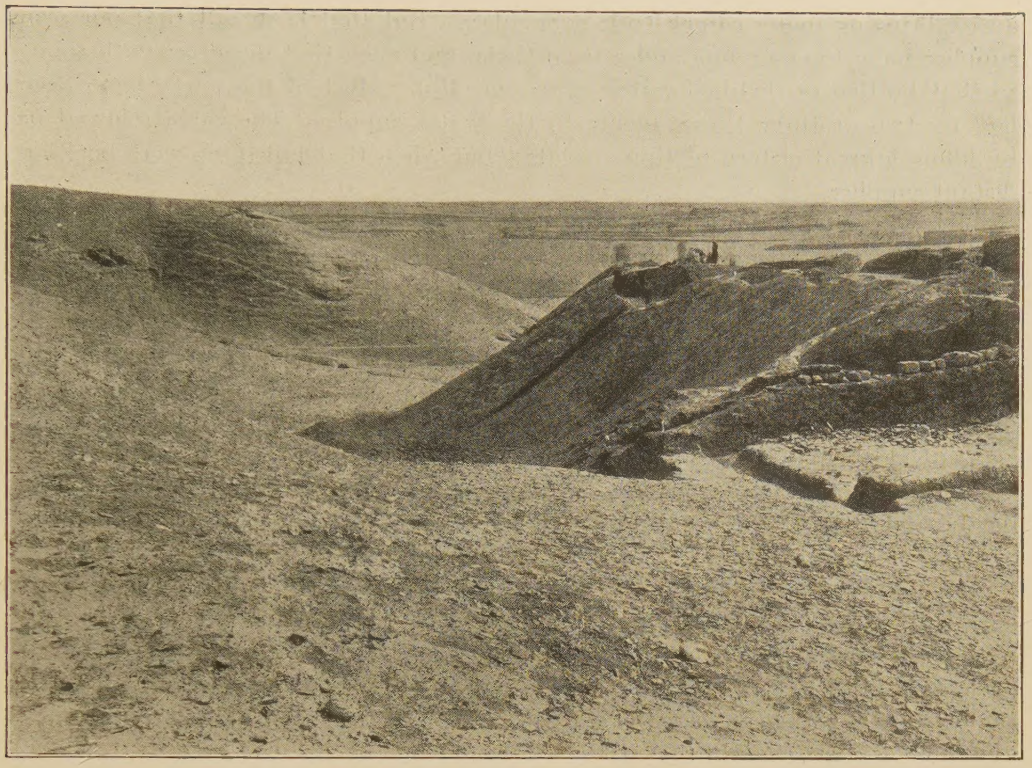
The historical setting of the Tell is shown by a site two miles distant, called on the map " ruins of Umm Jerrar," formerly assumed to be the Gerar of Genesis. But these remains are entirely of late Roman age, and could not be earlier, while Tell Jemmeh has fifty feet depth of ruins, all before the Roman period. It has, therefore, been concluded in recent years that Jemmeh is the site of Gerar. A similar shift of the name to a later ground occurs at Lachish, where near by is Umm Lakis, a Roman village ; these later settlements were thus named " its mother was Lachish " and " its mother was Gerar," when the old cities fell out of use.

The first practical step was to establish our quarters. For this Mr. Starkey and Mr. Harding went to Tell Jemmeh and built our row of huts in twelve days. No bricks were to be had, but stones and mud make substantial walls, and chopped straw was bought by the camel-load to mix with the mud. This mixture of mud and straw weathers well ; violent storms wash away the outer mud and expose a felt of straw which retains the mud within. The mixture is so tough that hammer and chisel is needed to cut through it. As soon as iron roofs could be put on, we moved down from Gaza and settled in.

The whole country along the way was absolutely bare dusty-brown soil, waiting for the winter rains, but, two months after rain was due, only a few showers fell. The settled Arabs tried ploughing when a shower encouraged them ; but only a faint green haze showed where seed had been wasted. The rainfall is always uncertain south of Gaza ; a few years ago a fine crop was gathered, since then each harvest has been worse than the previous one, now the drought was such as had not been known for sixty years, as an official told me. The cattle were dying by the wayside ; while families with their laden camels, and flocks, were on the track northward, sometimes four or five groups in sight at once. It was evident what makes the Arab a nomad, the inevitableness of wandering to seek for uncertain food supply. To relieve the famine, the government was moving flocks north by railway free of cost, to be sent back when food is again available in the south. In such a terrible need, the providing of work and wages in this district becomes a famine relief work, and we soon had three hundred men and boys, each earning enough to feed one or two others. Nothing could have been better for our prospects, as there was a competition for work, and, with the neighbourhood so dependent upon us, our position in the wilderness is the more secure.

The absence of vegetation during the drought leaves the ground bare to the gales, which sweep up the dust in clouds, sometimes so thick that nothing can be seen fifty yards away. These gales often lasted two or three days ; then work on the Tell was impossible—from the dust in the eyes and the force of the wind. Everything in our huts was covered with thick dust, and drawing, or even writing, was difficult from grit on the paper. At last, by the middle of February, there came violent storms which threatened to sweep away our roofing, with heavy rains and hail which whitened all the country. We could see the Judaean hills from Jerusalem to Hebron covered with snow for some days. The rain on the southern mountains fed the Wady Ghuzzeh till it ran down a torrent about 150 feet wide and six feet deep, going about six miles an hour. However unpleasant the weather was, at least we did not lose more than a few days' work altogether ; while further north it is considered needful to stop work entirely during two or three months of the winter.

The supply of water for so many workmen is an essential service. During the drought we got what the people could drink from a steam pump a mile or two



VALLEY CUT OUT OF THE MOUND BY DENUDATION; REMAINS OF WIDE GRANARIES ON THE RIDGE TO THE RIGHT.

DIGGERS, AND TRAINS OF BOYS TO CARRY EARTH, WORKING ON TOP OF THE MOUND.

away, bringing many camel loads every day. But that is so salt that our own supplies have to come nine miles from Gaza, and even that disagrees with some, so that bottled or distilled water is also needful. Most of the party have been laid by two or three times, owing to the water supply. The rains relieved us by filling a great cistern of Roman date ; but when that failed we were back on distant supplies.

These various conditions of modern life here are ancient history revived. In Genesis, the difficulty of sinking wells for watering cattle was the main trouble about Gerar, and there were continual disputes about keeping the wells. Yet Isaac had fat seasons, when he sowed and reaped a hundred-fold. There was a general shortage of water, interspersed with years when the rainfall produced the full fertility of the land. This region is a great grain country in good seasons, but uncertain, and the climate seems to be now just as it was three thousand years ago. Evidence of the importance of the harvests here at about 400 B.C. is given by nearly a dozen enormous granaries, varying up to 30 feet across inside, and altogether holding far more than would be required for a population of this district.

These conditions, and the position of Gerar, explain much of the Genesis narratives. We read of Gerar being in the land of the Philistines (xxi, 32, 34) ; Abimelech of Gerar was king of the Philistines (xxvi, 1, 8) ; the Philistines envied Isaac (xxvi, 14) ; the Philistines stopped the wells (xxvi, 18). Yet because the Philistines were not driven out of Crete till 1200 B.C., it has been assumed that there were none in Palestine till that date. We know how traffic was going on between Crete and Egypt for two thousand years and more before this—Cretan oil-jars passing in the 1st dynasty, and Crete copying Egyptian work ; therefore, we cannot suppose that a sea-faring people would entirely disregard a rich grain supply which bordered on the Egyptian coast, and was easily within reach. The position of Gerar would be very attractive to such explorers. It looks down the valley, in view of the Mediterranean, whence signals could be readily passed. It is in the midst of a rolling fertile land, where heavy crops could often be obtained. It commands a wide stretch of views along the Judaean hills, and over to Beersheba. There is good reason, therefore, in the known conditions, why we should expect that a fort might be placed here, to extend the food supply of rich, but sterile, Crete. It is not surprising, then, to read of a Cretan Philistine as ruling in Gerar, though he had a Syrian general, Phichol (Pa-khal=" the Syrian "). We know that invasions are usually preceded by some centuries of peaceful penetration, as by the Saxons during the Roman period in England, the Arabs under the Romans in Egypt, the Hyksos during the XIIIth dynasty. Similarly, we see by the evidences of trade that the Cretans must have long known this region, and probably drawn from it what they could, during many centuries before they needed it as a home of refuge.

The city of Abimelech must be far down in the fifty feet depth of ruins of Tell Jemmeh. To reach it, we need to cut away the later towns which were built over it. In doing so, these towns must vanish, and we are, therefore, bound to preserve all that can be recorded about them. At each level of building all the chambers must be cleared out, every wall planned, the sizes of the bricks measured, the levels of the top and bottom of each wall must be taken, and the aspect photographed from different sides. As the ruins are cleared, each has to be distinguished—the blocks of building, each with a letter, and the separate chambers with another, such as AL or FB. Then every object excavated is

marked with its chamber letters and its level in feet. Thus the relation of place and level is preserved for everything that is found, and the detailed study of the connections, and the meaning of the whole material, can be followed after the work is complete.

To keep up the record, every form of pottery is drawn to scale, with its place and level. There are about 120 forms from the top ten feet, nearly as many from the next six feet. All the forms of bronze and iron implements, of bronze fibulae, of lances and arrow-heads, netting bones and other objects are outlined full size, with their references. The plates of this record will provide for comparison with the results from other sites, and will form a continuous history of the civilisation in this southern outpost on the Egyptian border. Scarabs are often found, some seventy already this season ; weights also are frequent here, including three marked ones of the khoirinē standard.

The regular search for small objects is taught by half a dozen of our best Egyptian workmen, who train the raw hands whom we recruit from among the local Arabs. Many of these new men are developing into keen and efficient diggers, and both the men and boys keep a sharp look-out for even the smallest things, in order to gain the petty change which we give. When anything of value is reached, such as necklaces of beads, the men get some dollars on them to stimulate their diligence and care. Thus we are training a body of workers from whom may be drawn the experts for future work elsewhere in Palestine.

At first sight it seemed that labour would be difficult to obtain here. Around the great mound were only a dozen tents and two or three huts ; within a couple of miles were more tents and huts, here and there, and the nearest village was Deir el Belah, five miles away. But soon men flocked up, and in a few weeks we had between three and four hundred men and children at work. Some we housed in huts, dug in the mound and roofed with iron, but most go home each night. Some come from Gaza, nine miles away, and live in tents or curl themselves up in little grave-like holes. Many of the local Arabs are excellent material to train; bright, sensible and willing, far pleasanter than the rather surly Canaanites of the towns. A Persian who is Inspector of Education for South Palestine, and who has travelled in most countries, says that the natives here are the most intelligent people that he has seen. They are very diligent in their own field work, and are remarkably different from the shiftless, lazy Bedawin elsewhere, who merely bully the cultivators. Thus the human material here seems to comprise the stock best worth training for future work.

The control most needful is that of the boys and girls who carry out the baskets of earth on their heads. They have not the sturdiness of Egyptians, so they only take light loads, and that but slowly. They have only tended flocks before, and have never been accustomed to muscular work, so they need feeding and training for it. There is improvement already, and a few years of good supplies and regular work will, no doubt, raise a better standard. The business of watching and regulating the discharges of earth out of the various passages from the work is essential for success ; the slackness is merely due to habit, and not to fatigue, as they are lively enough when the work is over. The people are early risers by nature ; in the twilight they stream up across the fields, and every morning, when I greet them, most of the picks are at work and the children carrying, well before sunrise. As the days lengthen, a longer rest can be taken in the heat of the day, keeping sunrise and sunset as the natural limit of work. During Ramadan, the month of fast by day and feast by night, men cannot

be expected to be fit for digging when they have neither food nor water all day. So the rule is a brief relaxation at midday, and then stopping off at 3.30. A few are so diligent that they put in three hours' ploughing, until the welcome boom of gunfire at Gaza sanctions their evening meal.

The appearance of the whole work is a wide area of a hundred yards across, in the top of the hill, bordered by high sides of the unaltered mound, rising twenty feet on either hand. All over this space are walls a few feet high in course of being cleared around, and left here for planning and photographing. About eighty or ninety men are breaking up the ground, and the lines of children carry off the earth to the dumps outside, through half-a-dozen long sloping trenches. In view of working down through about fifty feet of towns, it is needful to keep the discharges low, so as not to be surrounded by a ring of banks. As we deepen the excavation, the exit trenches must also be lowered. The short length of carrying to the outer edge, and the number of separate discharges on three sides, prevent its being worth while to have the complication of a light rail system.

The mound is of a fantastic form like the letter H in plan—a long ridge, at each end of which is a crossing ridge. At first sight the deep bays on each side of the long ridge seemed to be parts of the original shape, but a discovery on one of the end ridges gives a different idea. On the crest of this ridge are small portions of the side of two immense circular granaries, nearly all of which have been washed away into the valley between the ridges. These granaries can be closely dated, as just under one of them was a Greek vase of the Vth century B.C. So, in rather more than two thousand years, the greater part of the valley has been gouged out by rainfall. As the place had a long history before that, the ground we have to examine is, perhaps, not more than half of the original area. There are four periods of construction, so far as examined.

(I) The granaries belong to the latest occupation of the site in the Vth and IVth centuries B.C.; after that there were left only a few scraps of pottery and some Arab squatters. The medium size of granary is twenty feet across, and probably thirty feet high; the larger ones are thirty feet across inside, and rose probably fifty feet, thus holding about seven hundred tons of grain each. Altogether there was storage for three or four thousand tons. The purpose of storing such a large amount here, in the Vth century, seems to have been for the army base of the Persians, to enable them, when necessary, to move a large army across the desert into Egypt, with full supplies behind it. To the Persian the hold on Egypt was of great value, and the power of striking quickly at any insurrection was requisite. There were also some walls of store-chambers, probably of this age, which were not built of brick, but of layers of mud about four inches thick, piled between boards to dry.

(II) On removing the latest structures, two great blocks of building appeared. One was a square fort, with deep cellular chambers, and massive walls, similar to the forts of Naukratis and Defenneh. The pottery with this was of the VIIth century B.C., and a slight foundation deposit, of model corn-rubber and calf bones, marks this as of Egyptian origin. The Canaanite usually buried a lamp (or an infant) as a deposit, and the Assyrian used inscribed cylinders to mark a foundation. As Psametek I was holding this region for a frontier against the Scythians, it seems certain that this fort was of the same age as his other two forts of the same design. Around it were large numbers of bronze arrow-heads, of the regular Scythian form, later adopted by the Greeks. A more decisive object was one of the very wide kite-shaped iron arrow-heads, such as are found in

INTERIOR OF LARGE GRANARY, WITH LEDGE FOR BRICK CONICAL DOMING.

RUDE POTTERY FIGURES OF THE NATURE-GODDESS, ABOUT IXTH TO VIITH CENTURY B.C.

Central Russia from later times. The purpose of this wide thin blade was, probably, to attack horses. The other building seems to be of the same period, but had less massive walls, and an annexe is as late as the Vth century B.C.

(III) After removing these buildings, a lot of chambers appeared, built with little regard to any continuous plan, merely grouped two or three together, and partly following older walls. The Cypriote pottery of the VIIIth and IXth centuries serves to date this, also a fine lazuli cylinder with figures of Babylonian monsters.

(IV) Buildings of grand style lay below. Great smooth bricks of yellow clay, 20 × 11 × 6 inches, ten times the bulk of a modern brick, were laid in sand for foundations, from three to six courses in depth. This is a thoroughly Egyptian method of construction, and obviously these are Egyptian buildings. The latest date to which they can be assigned is Shishak, whose hold on Palestine has lately been proved by his triumphal stele at Megiddo. Below these buildings lie thirty feet of ruins yet to be uncovered ; part of this we may hope to clear before closing the work.

The archaeological value of the excavation lies in the long series of pottery, bronze, and iron objects, which are all dated relatively, and linked to history by the connection of successive towns to known epochs. Every form has been drawn, and every example found has a reference on the drawings, showing its range of levels. The series of fibulae varies from massive semi-circular forms cut with varied ornament, through all the kinds of knee-fibulae, until the curved shape returned with a pin riveted on, and no spiral spring. The lances and arrow-heads are very varied in form and in origin. Many pottery figures of the nature goddess, and of animals rudely modelled, have been found ; also small cubical fire altars of limestone, sometimes engraved ; there are a few hoards of carnelian necklaces found in the houses. Dozens of scarabs, both Egyptian and local imitations, connect with the Hyksos kings and come down to Greek times. Weights frequently come to light, and being all levelled, they will help in fixing the history of the various standards ; three are marked of the khoirinē standard. Many of the fine objects that have rewarded the work are requisitioned for the Palestine Museum, but several will appear in London, along with the series of archaeological value for future reference. In this season we shall have contributed to the continuous record of the civilisation in the Jewish period, and have trained a native staff which will be a resource in the work of others elsewhere.

FLINDERS PETRIE.

A GRAECO-ROMAN APIS.

The accompanying illustration represents a bronze statuette of a vigorous young bull, which measures 7·8 cm. in length and 6 cm. in height. It was found in Cologne and is now exhibited amongst the Roman antiquities in the Wallraf-Richartz Museum (No. 1089). The left foreleg is incomplete and has not been restored. The right foreleg is raised; the head is erect and turned sideways; the horns are small, and on the nape of the neck between the ears and behind the horns is a hole.

Furtwaengler has discussed a series of similar bronzes,[1] some of which have been found in the Rhineland. The function of the hole was revealed by finding an attribute fitting into it in some specimens, the attribute being generally a crescent moon, and sometimes an owl, eagle, or female figure. The shape of the hole in the Cologne specimen would indicate a crescent moon. Furtwaengler considers this type of bull to be a Graeco-Roman version of the Egyptian Apis, showing the wide spread of the cult in Roman times. The substitution of a crescent for the sun's disc may be due to a mistake, supported by a knowledge of the connection between Apis and the moon, or to a deliberate preference for a plastic attribute in place of the mark of the crescent on the animal's flank. (Isis is sometimes represented with a crescent in Graeco-Roman art.) Preference for a plastic attribute would also explain the presence of an eagle between the horns, since a picture of this bird was a mark of Apis (Herod. iii, 28), whilst the owl may be due to the equations Io-Isis, Epaphos-Apis and Isis-Neit-Athena, and to the transference of the mother's symbol to the son.

This bull is readily distinguished from the three-horned Celtic Bull god by the position of the hole, as the hole for the third horn is in the curly patch on the forehead, and not on the nape of the neck.

L. B. Ellis.

[1] *Bonner Jahrbücher* **107,** 1901; **108–9,** 1902; **114–15** 1906.

THE COPTIC MUSEUM IN CAIRO.

One of the most interesting spots in Cairo, interesting from every point of view, historical, archaeological, political, and religious, is the great fortress of Babylon —a unique monument of Roman rule in Egypt—standing on the bank of the Nile opposite the eternal city of Memphis. It was on this site that the Holy Family took refuge during their flight into Egypt. The emperor Trajan built and garrisoned the fortress to command the desert route to the Red Sea, and here Cyrus, the Byzantine Patriarch and Prefect, negotiated with 'Amr ibn el 'Aas, and betrayed his masters by selling the country to the invading hordes of Arabs—treachery which brought about the triumph of the Crescent over the Cross. Had Egypt not bowed to the sword of Islam, the whole East would have remained Christian, and events would have pursued a very different course.

Here, at the present day, one can still see the huge bastions towering over the southern gate of the fortress through which the successful army of the Arabs entered, led by their skilful general, who secured this commanding position even before attacking Alexandria, the capital of the country. The church of El Mo'allaqah, dedicated to the Blessed Virgin, in this fortress, is so-called because it is built "hanging" in the space between the two above-mentioned towers. Adjoining the church stands the new building containing the Coptic Museum and Coptic Library.

It was at the suggestion of Lord Cromer that a Committee of Preservation of Arab Art was constituted for the protection of all the monuments dating from the Early Arab period. Butros Pasha Ghaly then suggested that the monuments of the Coptic period should be included within its domain. At the same time, he pointed out to the Patriarch that all stray objects of art and of historical value should be collected and housed until the time should come for the formation of a museum for the Christian period. His idea was not only to preserve all objects of wood, metal and faience, but—of equal importance—all MSS. existing in monasteries and churches. These should be collected in Cairo and, together with the Patriarchal Library, should form a nucleus for a permanent museum, which would tend to diminish the sale abroad, and neglect or destruction at home, of many valuable antiquities.

Shortly afterwards a Committee was formed under the presidency of Markus Pasha Simaika, to whose untiring diligence the collection of funds, and indeed, the existence of the museum, was really due, and this Committee, with few changes, is still at work. The building was especially erected for museum purposes, and has had to be enlarged from time to time, as necessitated by the rapid growth of the collections. It is now a large series of fine rooms, roofed in with decorative timbering of the XIV–XVIth centuries, and contains the finest specimens of *mushrabieh* work. The walls are encrusted with beautiful old slabs of marble, and there are many old mosaic tiles collected from different sources.

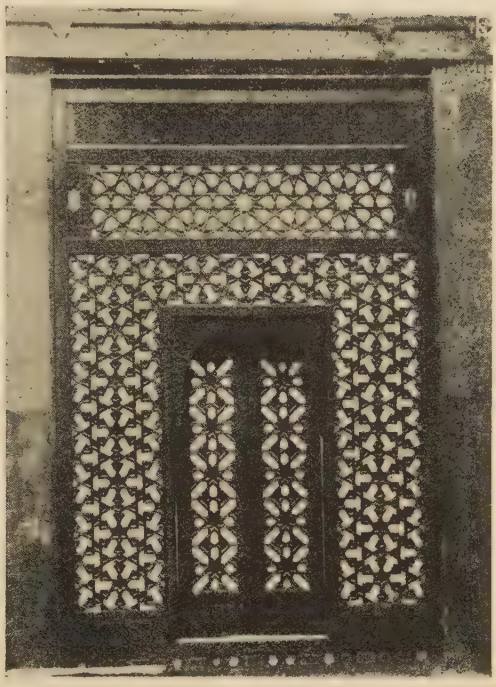
The museum also contains some choice ivory carvings, and Fig. 1 shows a panel with an open lotus bud in the centre ; it is of the utmost delicacy of workmanship and of the highest finish.

Fig. 2 is a door decorated with translucent panels of ivory, and the effect of the light shining through it must have been most impressive.

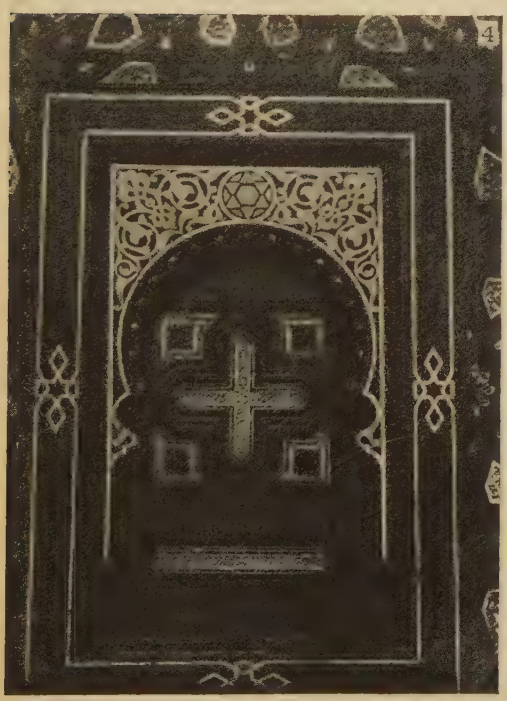
Fig. 3 is a window of woodwork and ivory in an iconostasis.

Fig. 4 is another carved panel of ivory, encrusted in cedar wood, in one of the screens.

1. Carved Ivory Panel of Lotus.



2. Door of Translucent Ivory.



3. Window Frame, Ivory Inlay.

4. Panel of Ivory Inlay.

The panel in the photograph (Fig. 5) shows a relief in carved wood of the Entry into Jerusalem; our Lord is represented as beardless. The Greek inscription above is a hymn. It is considered to be a IVth century work.

The museum also contains an interesting series of crosses of various centuries; amongst them one notices a cross mounted on a crescent, which dates from the Xth century.

Fig. 6 shows an ancient wooden altar, covered with a domed baldaquin; it dates from about the IVth century. Of the same nature and about the same date, there is a most beautifully carved door which was found built up inside a wall, in the neighbouring church of St. Barbara.

There are also very good collections of embroidered cloths of different periods, and of icons representing Coptic and Greek saints, some of which are worth hours of study.

Of work in bronze, there are many decorative candelabra and lamps. A beautiful dome and a chair are among the latest and most important acquisitions of the museum.

The specimens of stonework are housed on the ground floor, and here one may see all sorts of steles, inscribed and dedicated to saints and private persons, or covered with the most intricate lacework, or sculptured with various symbolic motives and designs.

Manuscripts, as before mentioned, are well represented, from the simple but finely written earlier documents to the most richly and extravagantly illuminated ones of the Xth and XIIth centuries. Of MSS. and fragments on vellum, this museum contains a collection probably second only to that of the Vatican. It has lately been enriched by the collection procured by the late Evelyn White from the Dēr Abba Macarius, in the Wady en-Natrun, the publication of which, by the Metropolitan Museum of Art, has just appeared.

In the small garden of the Coptic Museum, one meets with the most impressive sight in the whole compound, for, to the left, one descends the staircase leading to the original level of the floor of the garrison, and sees, towering above one, the huge walls on either side of the original southern gate of the fortress.

In the western side of the north hall, a richly carved wooden door leads into the Library. The first room contains an exquisite fountain, built in the centre of the floor and decorated with beautiful old coloured tiles. Standing against the walls, in this and the other rooms of the Library, are the elaborately worked cupboards of old Coptic style, containing the volumes.

The idea in founding the library was to collect all books, native and foreign, written about the Copts and their language and literature, their civilisation and history. It is increasing in size and utility, is open to the public, and forms a most valuable centre for the study of Christian Egypt.

The above short description shows how many treasures are contained in this fortress of Babylon at the present day, and yet very few of the thousands who annually visit Egypt even know of their existence. The tourists are dazzled by the monuments of pagan Egypt, to the neglect of the Coptic churches, yet the name of the Copts is in itself but an echo of the word Egypt. The ancient tongue of the Pharaohs is still being spoken every day in divine service within the walls of those neglected and hidden buildings. May it continue for ever!

Geo. P. Sobhy.

5. Panel showing the Entrance of Our Lord into Jerusalem.

6. Carved Wooden Communion Table and Baldaquin.

7. Outer Central Gate of the Fortress of Babylon.

SMALL OBJECTS FROM NAQADEH.

In 1899 Prof. Sayce, when visiting Naqadeh, found men digging out a grave, and bought some small objects from them. These conditions almost preclude any modern productions, as such would not be kept in a place which travellers rarely visit. As the grave contained two black-topped red jars, it was clearly predynastic. With these small objects, in the upper part of the page, are a few rather larger pieces below, which also came from Naqadeh.

The remarkable detail is the repetition of an oval on Nos. 2 and 3, with a sign inside like a seated figure. This is not a cartouche, as there are no ends below, and no cartouche is known till the IIIrd dynasty. It might be an early form of the walled town sign, with perhaps a name sign within it.

No. 1 is a pin of copper or a round borer.

No. 2 is of black steatite, complete, with a hollow at the middle of the top, as if to unite it to another piece. There seems to be the falcon, and possibly a *nefer* sign, by the oval. The other signs are not intelligible. On the back, No. 2A, a crescent of white limestone is inlaid in the black steatite.

No. 3 is part of a large bivalve shell, with the oval, and an unknown sign.

No. 4 is an alabaster pendant, with two holes joining in the mass. The top has had the horned ends, also seen on slates. On the other side, No. 4A, is the figure of an animal and signs.

No. 5, a flat plate of slate, with bevelled edge, and middle hole for passing a bolt through to join this as part of a larger object.

No. 6, a plate of buff limestone, with peculiar outline, and a hole through it. A sign is cut on it.

No. 7, the feet of a built-up figure of grey steatite, with hands at the sides.

Nos. 8, 9, flat plates of slate for inlay.

No. 10, flat slips of slate and white limestone for inlay.

No. 11, base of a fossil echinus, with incised signs, two of which are known as prehistoric.

No. 12, thin slip of slate, with suspension hole.

No. 13, thin slip of slate, of outline like No. 6.

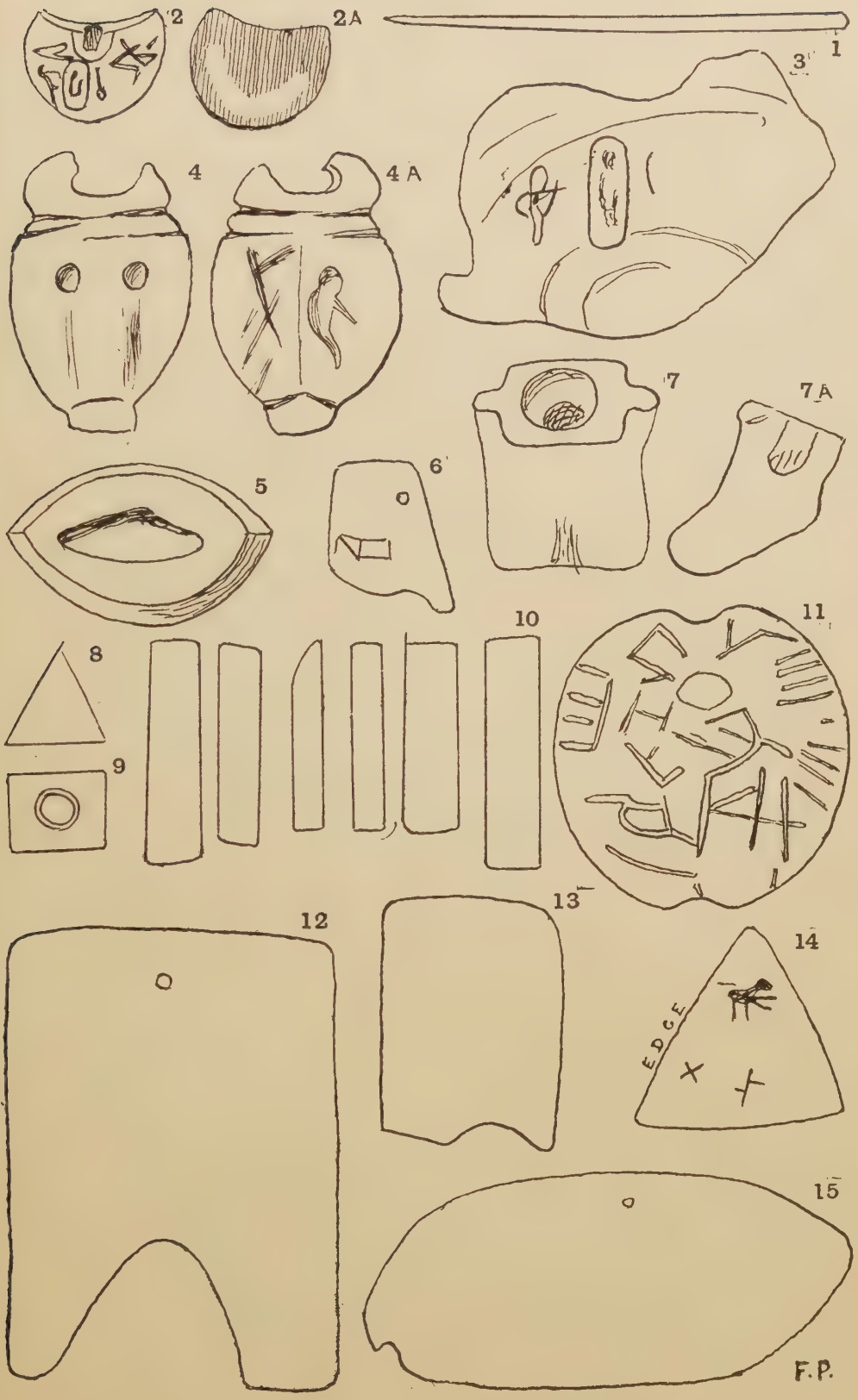
No. 14, piece of the edge of a thin alabaster saucer, with incised animal and two signs.

No. 15, thin slip of slate with suspension hole.

The black-topped jars have a rude figure of an animal incised on one, and on the other are palm trees incised on the inside of the jar, up the whole height.

I have to thank Prof. Sayce for permission to publish these interesting pieces, which are mostly new to us.

Flinders Petrie.


2
2A
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F.P.

NOTE ON PARABOLIC CONES.

Professor Petrie recently called attention to the possible use of parabolic cones in the cylindrical clepsydra.[1] Such a cone would enable an equally divided scale to be used in an "outflow" clock in the form of a right cylinder of uniform diameter.

In the Egyptological Museum at University College are two portions of cones which Professor Petrie thought might have been used for the purpose, and he very kindly lent me the larger specimen in order that the necessary measurements might be made, to determine whether the section was or was not parabolic.

The specimen measures about 7 inches in length and tapers from a diameter of $5\frac{1}{2}$ to one of $3\frac{1}{2}$ inches. It was set up with the axis vertical in an aluminium ring on Vee-blocks above a horizontal surface plate and adjusted as accurately as possible. Vertical pencil lines—numbered 1, 1A, 2, and 2A—were marked, in order, on the surface in four positions at right angles. Diametral measurements made at these points showed that the horizontal sections at three levels were not truly circular. The greatest difference in diameter amounted to ·254 inch, where the mean diameter was 4·7 inches.

Metal templates were then cut to fit the profile as accurately as possible at each of the four lines 1, 1A, 2, and 2A. These profiles were then transferred to squared paper and disposed about a nominal axis at distances corresponding to the diametral measurements. On the assumption that the curves so obtained formed part of a parabola, the axis was determined by construction (by the two-chord method) on the section of maximum diameter. The focus was found by a tangent construction, and thus the vertex and directrix.

The constant of the parabola was determined by measurements of values of x and y for two points on the curve, and the mean (·1815) of the two values obtained (·181, ·182) was used to construct the parabola $y^2 = 4 \times \cdot1815 \times x$.

The curves corresponding to the vertical sections of the specimen and the theoretical parabola were drawn out on tracing paper so that they could be conveniently compared by superposition.

It may be stated that, allowing for the inequalities of the surface of the fragment which might affect diametral measurements and slight errors in the cutting of the templates, the surface does approximate so very closely to the parabolic form as to lead to the conclusion that it is possibly intentional.

Unfortunately it is not possible to date the specimen. If it is Graeco-Roman, it seems possible that attempt has been made to reproduce a parabolic form in stone. If this is the case, it would probably have been effected as follows: The architect would draw out the plan in the same way as the plans of the columns recorded at Philae.[2] Templates would be provided (in thin sheet metal or other material) for the use of the stonemasons, who would smooth down the stone until the templates everywhere fitted.

[1] See Ancient Egypt, 1924, Part II, p. 50.

[2] See *Zeitschrift für Aeg. Spr.*, 1896, Vol. XXXIV, pp. 69 to 76 and Plates III to VI.

If this specimen was used—as Professor Petrie thinks—in connection with a cylindrical clepsydra of the outflow type, the small characteristic would have necessitated a vessel at least 17 inches high on a base of 7 inches. The only cylindrical clepsydra found up to the present was discovered at Edfu,[1] and, judging by the form and style of decoration round the rim, dates from A.D. 100 to A.D. 200.

So far as I am aware, there is no direct evidence of knowledge of parabolic curves earlier than Greek times. Menaechmus (*circa* 360 B.C.) appears to have been the first to discuss the properties of the parabola and, like so many Greeks, he probably found in Egypt at least the raw material on which he based his theoretical investigations. The impact of the restless, inquisitive, alert Greek mind on the civilisation of Egypt is a fascinating problem and largely untouched ground.

From what we know of the mind of the ancient Egyptian, it seems likely that he would have discovered the practical application of some sort of cone in a clepsydra by experiment in the first instance. It is a very far step to the application of a paraboloidal cone to such a complicated problem as the rate of flow of a liquid from a vessel in the form of a right cylinder.

It would be of interest if other examples of curved cones could be brought to notice and investigated. A detailed study of architectural curves, too, both ancient Egyptian and Greek, might provide some useful data bearing on the earliest practical use of parabolic forms.

R. W. Sloley.

The lesser cone, which may have been used in a clepsydra, is cast in plaster, 2·4 inches wide at the base and 3·9 inches high. It is hollow with sides 0·5 to 0·6 inches thick. The outside varies between a conic and a parabolic outline. It is obviously truncated in design, and the simplest way to regard the frustrum of such a figure is to take the square of the radius as proportional to the height. Then, these being proportionate, the differences of the various stages one from the other will also be proportionate. The average of such proportions, therefore, will give the scale for determining the apex of the whole parabola.

Thus, comparing the height and diameter at five different levels, we find that the deviations from the measurements, taken to the nearest hundredth of an inch, are :—

Parabola	or	Cone.
−·009		−·026
−·004		+·004
+·021		+·034
−·003		+·004
−·007		−·016
means ·009 inch		·017 inch.

Thus the form agrees to a parabola with only half the variation from a mean cone. The design, therefore, seems to have had the parabolic form in view, though a cone would give practically the same result for a clepsydra.

Flinders Petrie.

[1] See Ancient Egypt, article "Ancient Clepsydrae," *loc. cit.*

MARKING-INK IN ANCIENT EGYPT.

THROUGH the kindness of Dr. Alexander Scott, Director of the Research Laboratory of the British Museum, I have had the opportunity of making a microscopical examination of the name on the margin of a winding-sheet of Zehuti-sat (B.M. Exhibit 37105), and of applying micro-chemical tests to the pigment attached to the fibres.

These brownish characters are stated by Sir Ernest Budge in the Second Edition (1925) of his book *The Mummy* to consist of indelible ink. "It is worthy of note," he writes (p. 217), "that Egyptian ladies marked their linen with indelible ink; see the winding-sheet of Tchehuti-sat (B.M. 37105)."

It has been established by Mr. A. Lucas (*Analyst*, 1922, **47**, 11) that it is quite possible for carbon inks made from impure lampblack to become brown with age, and many examples of this change have been noted on old papyri. Yet even after such an alteration, an ink of this type would be "indelible" as regards the action of light and air, though, unlike the modern indelible marking-inks, it might be easily removable by rubbing or other mechanical treatment.

The tests which I applied, however, have shown that the pigment on this winding-sheet is not a carbon ink, for it can be readily and completely bleached. Iron-gall inks, as we know them to-day, were unknown to the ancient Egyptians, and, as I anticipated, there was no trace of iron or copper in the pigment.

The characters appear to have been made on the fabric by means of an organic brown pigment, which may have been of the nature of bistre free from any particles of carbon. It was probably applied as a paint in a manner analogous to that used for stencilling textile fabrics at the present day. At all events, the evidence does not support the conclusion that it is an "ink," and as its permanence is only relative, it should not be termed "indelible" without a qualification as to the meaning of the adjective.

C. AINSWORTH MITCHELL, M.A., F.I.C.

THE SISTRUM OF ISIS.

The altar which is shown on Figure 1 is in the Musée Lapidaire of Nîmes. It is figured and described by Espérandieu in *Recueil général des bas-reliefs, statues et bustes de la Gaule romaine*, Vol. I, No. 496. It is 1·05 m. in height. The inscription reads as follows: Lunae et Isid(i) aug(ustis) sacr(um) C. Octavii Pedonis lib(ertus) Trophimio sevir aug(ustalis) v(otum) s(olvit). The floral

1. Altar to Lunar and Isis. Nîmes.

scroll is, in reality, continued down both sides of the altar, but is not shown on the right side of the photograph. It is interrupted above the inscription by a crescent moon and a sistrum, the attributes of the Moon and Isis respectively. The altar is described as careful work of the Ist century.

The monument is an interesting example of the development of syncretism in Roman times, and may be looked upon, perhaps, as a step towards the pantheistic conception of Isis which is expressed in the pantheistic bronzes, several of which have been found in the Rhineland. Some of the bronzes in which the sistrum of Isis occurs are illustrated in this article.

Pantheistic bronzes may be divided into three classes :—

1. Those in the nature of a *tropaion,* in which the symbols are grouped round the main object, such as the lance of Mars or the club of Hercules.

2. Votive hands, which are generally dedicated to Sabazius.

3. Those in which a main deity is portrayed, round whose symbol the attributes of the other divinities are grouped. (B.M. Venus Panthea, No. 829, Fig. 7, is an interesting example of this class, although in this case there is no sistrum.)

The pantheon which is illustrated in front view in Fig. 2 was probably found at Cologne ; it is now in the Provinzial-Museum, Bonn. The central object, which is incomplete, is probably the lance of Mars. Round it coils the dolphin of Venus ; to the left is the quiver of Diana ; above this, the sistrum of Isis, and behind the sistrum, the pedum of Pan ; to the right is the club of Hercules, above it the cornucopiae of Fortuna ; behind the cornucopiae is an object which, being incomplete, cannot be identified ; it may be the chopper of Silvanus.

A more elaborate specimen (Figs. 3 and 4) was found at Kastell, near Mayence, in 1912. It is now in the private ownership of Dr. Fritz Fremersdorf, Keeper of the Department of Roman Antiquities in the Wallraf-Richartz Museum, Cologne[1]. In this example, the rudder of Fortuna is the central object. (The rudder is best seen in Fig. 4, which gives the back view ; in Fig. 3, the front view, it is more or less hidden by the other symbols.) Round the rudder coils the serpent of Aesculapius. The attributes which are grouped round it may be apportioned as follows : the thunderbolt of Jupiter (below the serpent) ; on the left, the sistrum of Isis, the cornucopiae of Felicitas, the flat sacrificial bowl of Juno, the quiver of Diana, the thyrsus of Bacchus, the pedum of Pan (a curved knotted stick), and a small bowl, perhaps representing Liber. On the right side are placed the torch of Ceres, the cymbals of Cybele, the tongs of Vulcan, the club of Hercules ; below these is the open mirror of Venus. There is also the plectrum of Apollo. The range of gods is a wide one. It could be restricted by assigning more than one attribute to one and the same god, as, for instance, the cornucopiae and rudder to Fortuna, but this would seem contrary to the purpose of a pantheistic monument, which presumably aimed at including as many gods as possible. Four objects remain unappropriated : the hammer (below, at the extreme left), the ball (below the club), and the wheel, and base at the extreme right. Dr. Fremersdorf is unable to dispose of the ball and base conclusively, but suggests native gods for the wheel and hammer, since Jupiter and Vulcan are already represented by the thunderbolt and tongs respectively.

[1] F. Fremersdorf, "Eine pantheistische Bronze aus Mainz," *Bonner Jahrbücher,* 129 (1924), pp. 128–135.

PANTHEISTIC MONUMENTS. RHINELAND.

There are several instances of a Celtic hammer god, and also of a Rhineland divinity with a wheel (the "Celtic Jupiter"). If this suggestion be correct, we have in this monument one more instance of the "mysterious night" which lies concealed beneath the beams of the "Interpretatio Romana." In spite of the diversity of symbols on this bronze, several important ones are missing, such as the lance of Mars, the palm of Victory, the trident of Neptune, the shepherd's staff of Mercury and the symbols of the Sun and of Minerva. No single pantheon known includes all the symbols; the choice presumably depended on the cults in the place of origin

It is impossible to say whether the Mayence bronze is a *tropaion*, or whether it was once accompanied by a deity who has now disappeared. As the symbols are only visible from the front, the object would, in the latter case, have been held in the right hand. Fortuna holds the rudder in the right hand almost without exception, but the deity might also have been Isis or Venus (*cf.* B.M. Venus Panthea, Fig. 7, where the main object is a rudder).

Pantheistic bronzes have been discussed at length by Weisshäupl[1] who concluded that they were in every case dedicated to one particular divinity, above all to Isis, on whom the powers of all the other gods were "projected." This conclusion derives the fullest support from a limestone altar which was found at Galesano, in southern Istria, and is now in the Pola Museum. The altar bears a number of divine symbols on the face and sides, and it is definitely dedicated to Isis, as there are two lines of inscription above and below the symbols on the face, reading: *Isidis imperio Q. Lutatius Iucundus.* Some of the symbols are too much damaged to be recognised; amongst those which are recognisable may be mentioned the following: sistrum, crescent moon, situla, blades of corn, phallus, a bird (goose?), syrinx, rudder, thunderbolt, hammer, tongs, cymbals, a double flute, shallow bowl, serpent coiling round a staff, dolphin, trident, and two crossed double axes. A winged and naked boy carries a torch in one hand, and with the other holds a dog on a leash. Most, if not all, of these attributes may be found in association with Isis on other monuments; for instance, serpent, dog, double flute, syrinx, corn, winged boy and bird are to be seen on the ivory panel in the cathedral at Aix-la-Chapelle (Ancient Egypt, 1926, Part IV, p. 101). Sistrum and double axe may both be seen on the bronze votive tablet to Jupiter Dolichenos, which was found at Heddernheim, and which is now in the Wiesbaden Museum (Fig. 5). This bronze is particularly instructive as regards syncretism in the time of the Middle Empire. Hovering over the principal god is a Nike with wreath and palm. On other monuments, Dolichenos is sometimes accompanied by a female divinity, also mounted on some animal, but in this case, the goddess is relegated to the lower register. This curious scene has not been satisfactorily explained as yet; the goddess stands on a donkey, and holds a sistrum in the right hand and a torch or sceptre in the left; she appears to be Isis Panthea.

We have followed the sistrum of Isis into strange company, and have wandered far from the ancient Egyptian conception of the deity. Some of these symbols were transferred to her from a very large circle of Graeco-Roman gods, with whom she became equated, or whose qualities she came to possess. She developed, in fact, into *the* goddess, Isis Myrionymos, Isis Panthea. In support of this statement may be quoted a Soissons altar dedicated to Isis Myrionyma

[1] R. Weisshäupl, "Pantheistische Denkmäler," *Jahreshefte des oesterreich. archäolog. Instituts* (1910), Vol. XIII, pp. 176–199.

PANTHEISTIC GROUP WITH VENUS.

(*Isi myrionymae et Serapi exspecta[ta Her]metis Aug. d[isp] v.s.l.m.*) also by a bronze statuette of Isis Panthea which was probably found at Cologne and is now in the Provinzial-Museum, Bonn (Fig. 6). In the statuette the goddess wears the headdress of Isis and a long dress and cloak; in her right hand she holds a rudder, in her left, an object which was doutbless, when complete, a cornucopiae.

So much for the pantheistic conception of Isis as revealed by the monuments, which show that Isis, more than any other deity, came to be looked upon as the great mother-goddess whose essence was worshipped under many names. Literary evidence of this fact is given by Apuleius (*Metamorph.* XI, 2, 5). Lucius invokes Isis in these words: "Queen of Heaven, whether thou art the genial Ceres, the prime parent of fruits, who, joyous at the discovery of thy daughter, didst banish the savage nutriment of the ancient acorn and, pointing out a better food, dost now till the Eleusinian soil; or whether thou art celestial Venus who, in the first origin of things didst associate the different sexes, through the creation of mutual love, and having propagated an eternal offspring in the human race, art now worshipped in the sea-girt shrine of Paphos; or whether thou art the sister of Phoebus, who by relieving the pangs of women in travail by soothing remedies, hast brought into the world multitudes so innumerable, and art now venerated in the far-famed shrines of Ephesus; or whether thou art Proserpine, terrific with midnight howlings . . . . by whatever name, by whatever ceremonies and under what form it is lawful to worship thee, do thou graciously, etc." The goddess replies: "I . . . . am Nature, the parent of all things, the mistress of all the elements, the primordial offspring of time, the supreme among divinities, the queen of departed spirits, the first of the celestials, and the uniform manifestation of the gods and goddesses; who govern by my word the luminous heights of heaven, the salubrious breezes of the ocean and the anguished silent realms of the shades below; whose one sole divinity the whole orb of the earth venerates under a manifold form, with different rites, and under a variety of appellations. Hence the Phrygians, that primeval race, call me Pessinuntica, the Mother of the Gods; the aborigines of Attica, Cecropian Minerva; the Cyprians in their sea-girt isle, Paphian Venus; the arrow-bearing Cretans, Diana Dictynna; the three-tongued Sicilians, Stygian Proserpine; and the Eleusinians, the ancient goddess Ceres. Some call me Juno, others Bellona, others Hecate, others Rhamnusia. But those who are illumined by the earliest rays of that divinity, the Sun, when he rises, the Aethiopians, the Arii and the Egyptians, so skilled in ancient learning, worshipping me with ceremonies quite appropriate, call me by my true name, Queen Isis." (Transl. Bohn's Libr.)

Her invocation as *una quae es omnia dea Isis* could hardly be more beautifully or convincingly expressed. The earlier and simpler ideas concerning the goddess found expression in a monologue which was placed in her mouth. It has been preserved in three versions, all of which were based on the same prototype. The shortest of the three is given in *Diod.* I, 27, from the report of a historian of a stele on the tomb of Isis in Nysa in Arabia; it runs as follows: "I am Isis, queen of the whole earth. My teacher was Hermes. What I have established as law, no man can undo. I am the eldest daughter of the youngest god Cronos. I am the wife and sister of King Osiris. I am she who first found corn as food for man. I am the mother of King Horus. I am she who rises in the dog-star. The town of Bubastis was built in my honour. Hail to thee Egypt, who nourished me!"

The second version is on the island of Ios, and is a prose inscription of the IInd—IIIrd century A.D. It reads thus: "I am Isis, the ruler of the whole land. Hermes was my teacher, and with Hermes I invented the writing of the people so that everything should not be written with the same letters. I gave laws to mankind and established what no one can alter. I am the eldest daughter of Cronos. I am wife and sister to King Osiris. I am she who rises in the dog-star. I am she who is called a goddess by women. The town of Bubastis was built in my honour. I am she who separated heaven from earth. I showed the stars their path. . . . . I discovered navigation. I brought men and women together. I caused children to be loved by their parents. Together with my brother Osiris I put an end to cannibalism. I have taught mankind the mysteries. I have caused honour to be shown to the images of the gods. I have established the temple districts of the gods. I have destroyed the ways of government of tyrants. I have caused men to love women. I have made Right more powerful than gold and silver. I have caused Truth to be considered beautiful." (*C.I.G.* XII v, i, p. 217).[1]

In Fig. 1 the sistrum and the moon are given equal importance. It is curious to find the sistrum disappearing later, whilst the moon waxes, particularly as the moon had nothing to do with Isis originally. When mythological speculation made Osiris the sun, Isis became the moon. She is invoked in the name of Moon (*Diod.* I, 11, 25; *Plut. de Isid.*, cap. 52, 43; and elsewhere.) The identification was helped by a misinterpretation of her ancient headdress; the cow's horns were thought to be a crescent moon. *Apul. Metamorph.* XI, 3, compares the *plana rotunditas*, really the sun's disk between the horns of a cow, with *argumentum lunae.*

The favourite Graeco-Roman theme of mother-goddess and child strongly influenced the conception of the Virgin and Child, and it is not always possible to be sure whether a representation of a mother holding a child is intended for Isis or Mary. This being so, it is not, perhaps, over-fanciful to consider the crescent moon on which carved, sculptured, or painted Virgins so often stand as a survival of the older cult, representing in the time-honoured way the triumph of Christianity over paganism. (His enemies under his feet as on the soles of Egyptian mummies.) *Plus ça change, plus c'est la même chose* in pictorial methods of expressing ideas: a serpent under the feet represents paganism in early representations of the Crucifixion. Roman Emperors were shown riding down their enemies who were represented as animals (*cf.* another ivory panel in Aix cathedral, where the animal in question is probably the lynx of Gaul). On the other hand it is, of course, possible that the ancient church boldly appropriated a dangerous symbol, in pursuance of the wise policy by which it changed heathen gods into Christian saints. Paganism died hard, or lived on under another cloak, and it is by no means impossible that St. Anne in another favourite group, namely the Virgin and Child with St. Anne (the group is called *Anna Selbdritt* in German), may represent a heathen goddess who was too deeply rooted in the affections of the people to be left out of account.

L. B. Ellis.

[1] Pauly-Wissowa, *Real Encyclopädie* 1916, Vol. IX, 2, 2114.

REVIEWS.

Fishing from the Earliest Times. By W. Radcliffe. 2nd edition. Large 8vo. 494 pp., 59 illustrations. 1926. (Murray.) 21*s.*

That Mr. Radcliffe's book should have reached a second edition in so short a time is proof of the excellence of the work. He divides his subject geographically; Greece and Rome are taken together and occupy rather more than half the book; then come in order Egypt, Mesopotamia, Judaea, and China. In the Introduction there are, besides an account of palaeolithic representations of fish and of neolithic fishing implements, some facts about fishing in ancient India and among the Celtae. The book contains a mass of information, not merely on fish and fishing, but on the manners and customs of the people concerned, illustrated by quotations from contemporary writings. The Egyptian section contains practically everything that is known at present of the art of fishing among the ancient inhabitants of the Nile Valley; for, as the author remarks, "to Egypt belongs the glory of holding in future and happy thrall world-wide subjects, who salute her as the historical mistress and foundress of the art of Angling." In proof of this statement he quotes Newberry's *Beni Hasan* (Vol. I, Pl. XXIX) and Wilkinson, Pl. 371. He notes, however, that actual "examples of Spear-Harpoons are found in Egypt much earlier than those of either the Net or the Hook." As regards the fish-hook, he points out that even the earliest known Egyptian hooks are very far removed from the primitive: "the Hook, fashioned in no rude method, and wrought of no inflexible material, but of *copper*, makes its appearance" at the end of the predynastic period. "From this it is clear that Egypt (*a*) can lay no claim to have invented this method, and (*b*) had travelled many stages on the long road of piscatorial invention. The complete absence in the Nile Valley of hooks of bone, flint, or shell which occur in so many neolithic centres in other parts of the world adds confirmatory evidence." Since this book was written, a shell fish-hook was found at Badari. He has several paragraphs to explain the passage from Chapter CXXV of the Book of the Dead, which is clearly mistranslated; his quotation runs: "I have not caught fish with bait made of fish of their kind," where he has omitted the brackets by which Sir Ernest Budge has attempted to make sense of a misunderstood passage. The sentence must, as the possessive pronoun shows, be taken in connection with the clause immediately preceding; the two are clearly parallel phrases, and the must be translated in the same way in both, either as the preposition "for" or as the genitive "of" or "belonging to." In the first phrase the harpoon-sign does not read *ḳrś* "bones" in this case, but *gnw* "records," *i.e.* recorded land; in the second phrase *ḫ3·t* is not "dead bodies" but "lagoons." The whole sentence would then run: "I have not snared birds belonging to the recorded lands of the gods, I have not caught fish belonging to their lagoons." This gives very good sense for the purpose, which was to show that the speaker had not committed any ecclesiastical crime. The tabu on eating fish is discussed by Mr. Radcliffe

at some length ; it appears to have belonged to the king, the priests, and some of the upper classes, but was not practised at all by the generality of the populace. I would suggest that fish-eating was the common practice until the introduction of Osiris-worship, for judging by modern usage it survived in the centres of the Seth cult and among the commonalty generally. At Naqada, originally one of the chief towns of Seth-worship, fishing with nets is still one of the staple industries, and is so successful that the inhabitants say that when a fish starts to swim down the Nile from Aswan to Cairo it goes along quite happily till it reaches Luxor, and there it begins to pray to God to save it from the nets of Naqada. The rest of Mr. Radcliffe's book is concerned with fishing in other ancient countries, with which in this review I have nothing to do, and can therefore only remark that the high level of accuracy is maintained. The book is written in a lively and readable style interspersed with racy stories and witty remarks ; the illustrations have been chosen with care and are well reproduced. Altogether a book to be recommended. M. A. M.

La Magic dans l'Égypte antique. By François Lexa. 3 vols. 8vo. 220 × 235 pp., 71 pls. 1925. (Geuthner.) 200 frs.

This book is avowedly written for the instruction of occultists, or perhaps it would be better to say that it is an attempt to give a more scientific turn to occultism. It is impossible, therefore, to treat it as a serious effort to extend our knowledge of ancient Egypt, except among a very limited public. The introduction, for example, takes up twenty pages, in which the views of the principal Egyptologists, ancient and modern, on the subject of Egyptian magic are set out. The author's own views, with elementary explanations of the possible origin of magical rites, are also given at length. In his further exposition of the subject he ranges from inscriptions in tombs of the Old Kingdom to the Magical Papyrus of London and Leyden, which dates to within the Christian period, without any indication whatsoever of difference in time. With the material in his hands, he has lost the opportunity of giving to the world an account of the development and changes of magical ideas in Egypt, which would have been of value both to the scholar and the general reader. As it is, he has fallen into the snare which entraps so many writers on ancient Egypt, of appearing to consider that everything which happened in the centuries before Christ occurred at the same time without any sequence or development. The chronological sense is as yet undeveloped in many writers ; yet for both student and non-student it is the essential basis. There are certain fundamental mistakes also. In the sentence, " les chrétiens égyptiens acceptèrent l'écriture grecque, complétée par quelques signes hiératiques pour les voyelles qui ne se trouvaient pas dans la langue grecque," there are three distinct and separate mistakes. In the first place, Egyptian written in the Greek character was in use before Christianity came into Egypt ; secondly, the supplementary signs are taken from demotic and not from hieratic ; thirdly, those signs are, without exception, consonants and not vowels. Again, in his account of the relation between magic and religion, where he explains the meaning of the offering formula, he entirely omits the fact that a god's name is invariably included in the early texts, for this would invalidate his argument. One good point of the author's work is the great mass of Coptic material which he has brought together in a form easily accessible to the general reader. Few people realise how much of the ancient ideas and ritual continued among the converts to Christianity

and their descendants, and Dr. Lexa has succeeded in showing this continuation very clearly. The atlas of plates contains some interesting photographs of the lesser gods and lesser-known amulets, though here again an indication of their dates would have added to their value. M. A. M.

L'Écriture Égyptienne, essai sur l'origine et la formation de l'une des premières écritures Méditerranéennes. By EDOUARD NAVILLE. 143 pp. (Paul Geuthner, Paris.) 30 frs.

Dr. Naville's reasons for writing this book are set forth in the preface, where he maintains that writing originated in drawing, and that it was only by degrees that a drawing obtained a syllabic, and then, in some cases, an alphabetic character. He puts forward two further statements: one, that Egyptian writing was always figurative, and the other, that the German method of transliteration is wrong, because it gives groups of signs which are impossible to pronounce. In the body of the book he develops all these propositions, his argument being that the modern method of studying ancient Egyptian is based upon our knowledge of Semitic languages and that no allowance is made for the fact that it was a spoken and therefore an ever-changing language, which varied in different parts of the country. Here he is unfair to the very latest ideas on these subjects, for it is now recognised that there are other elements besides Semitic in Egyptian, and also that our knowledge of the ancient dialects, which no doubt existed, is as yet too slight for any definite statement, though a considerable amount of work is being done. But all readers will be in accord with the author when he points out that the Egyptian script, in common with that of many other countries, originated as pictures of objects, which gradually lost their pictorial value and became merely signs for the associated sound; these signs were then used as groups of letters to spell out words of entirely different meanings. The author is strongly of opinion that vowels were written in Egyptian, and it is refreshing to find him running a-tilt against the rigidly academic methods of the German school and arguing that the hieroglyphs represent a living spoken language. The book has considerable value for this reason, besides the merit of being written by a scholar who had devoted nearly sixty years of a long life to the study of Egyptology. M. A. M.

Deux grandes découvertes archéologiques en Corée. By S. UMEHARA. (*Revue des Arts Asiatiques.*) 1926.

This contains a further account, illustrated, of the royal tombs of Korea. They are of two types; a wooden chamber with entrance from the top of the tumulus, and an arched brick chamber with side entrance. The former type is the richer in contents. Objects that are dated range from 85 B.C. to A.D. 52. Lacquered wood has been considerably preserved; the cover of a bowl has a long inscription stating the contents, and the names of seven artists who took part in making it, 4 B.C. There is no such personal record in any other land. Another tumulus opened by Mr. Umehara had a tall crown of gold, ear-rings, belt-fastener, and armlet, all minutely wrought in gold: over a hundred vases of pottery, and others of silver, gilt copper and lac. All discoveries are preserved in the National Korean Museum. F. P.

JOURNALS.

Zeitschrift für Ägyptische Sprache. Vol. LXI, 1926.

Wreszinski, W.—*Bäckerei.* This is a discussion of the various scenes showing the preparation of bread and cakes from grain. Some of these scenes cannot be explained, but it is suggested that one of them (*Ti*, 83), depicts the rising of the dough before the loaves are kneaded. The raising agent employed was presumably Iceland moss, large quantities of which were found at Deir el Bahri.

Scharff, A.—*Vorgeschichtliches zur Libyerfrage.* Four prehistoric vases are published in this article; also a bowl in the Golenischeff collection. The vases are recent additions to the Berlin Museum. The writer considers that one of the earliest representations of the Set animal may be found on one of them. The following arguments are urged in favour of a connection between the Naqada culture and Libya:—(1) The likeness between the dogs on white-lined pottery and the hounds with Libyan names on the stele of King Antef. (2) The presence of the Libyan phallus sheath on vases and ivories. (3) The Libyan god *ꜣšˁ*, is a form of Set, lord of Ombos. (4) The identification of the word *bš* on the stone vases of Kho-sekhem with the Libyan place-name *bꜣšˁ*, which is to be sought in the neighbourhood of El Kab. (5) The distribution of certain flint arrow-heads from Mauretania and Algeria across the oases to Naqada and Nubia. (6) A similar distribution of a certain type of stone vase, shaped like a truncated skittle with a wide base.

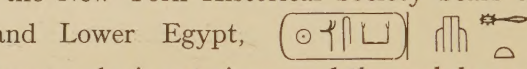
Borchardt, L.—*Jubiläumsbilder.* (1) A revised reconstruction of some fragments of the Sun temple of Abu Gurob shows that the scenes were incorrectly described in a previous publication, and that they represent, in reality, the *Sed* festival of Ra·en·User. (2) In the temple of Khonsu, built by Rameses III at Karnak, the building material was taken from older temples. On some thirty-two of the blocks re-used in this way are scenes depicting the *Sed* festival of Amenhotep III, of which the temple at Soleb contained the only representation hitherto known. The most likely source for these blocks would be the great temple of this king which once stood near the Colossi.

Schäfer, H.—*Die angebliche Basilikenhalle des Tempels von Luksor.* In this article Schäfer reaches the same conclusion which was expressed by Engelbach in Ancient Egypt, 1924, Part III, namely, that the Colonnade at Luxor Temple represents the original plan, and was not the hastily-finished central portion of a basilica which was planned but never completed. Schäfer holds that the Colonnade was a vestibule, comparable with those at Soleb and Sedeïnga, so that the form of its ground plan in the time of Amenhotep III and of Tutankhamen entitles the temple to be placed in a series of contemporary buildings. With its two rows of columns, such a vestibule admirably served its purpose of leading the worshipper up to the inner sanctuary. The earliest example of the use of a basilica to emphasise the processional route in a temple would then be the Great Hall at Karnak.

Roeder, G.—*Rameses II als Gott.* The monuments which form the subject matter of this paper are now in the Hildesheim Museum. If, as is assumed, this find actually came from Horbêt, a military colony must have existed there in the time of Rameses II. In this station, four statues of the Pharaoh received the largest share of worship, and thus testify to the deification of the monarch in his lifetime and within Egyptian territory. The most remarkable sculpture shows Rameses II rewarding an officer named Mes with gold ornaments; on the lower part of the stone, the king, standing near his statue, throws necklaces to "the army," which is represented by a few soldiers, who are drawn with great freedom of line. Several votive stones were evidently made for stock, as the place for the names was left vacant.

Sethe, K.—*Ein Prozessurteil aus dem alten Reich.* Berlin Papyrus 9010 contains the judgment given in an Old Kingdom lawsuit. The litigants are the eldest son of the deceased, and a man who claims to have been appointed his trustee in the interests of all the children. The verdict suggests that the normal procedure in the Old Kingdom was for the eldest son to inherit unless the testator had made a will otherwise.

Sethe, K.—*Zu der enklitischen Negation* w. The use of the enclitic negative explains certain passages, in the Pyramid texts and elsewhere, which have not been completely understood hitherto. Any doubt as to the correct interpretation of this particle is removed by the presence of after the *w* in *Pyr.* 815.

Williams, C. Ransom.—*The Cylinder Seal of a King Userkerē.* A cylinder seal in the possession of the New York Historical Society bears the cartouche of a king of Upper and Lower Egypt,  . Unfortunately, the second cartouche is not given, and the seal does not, therefore, help to solve the problem of King Khenzer (Petrie, *History* I, p. 245).

Bissing, F. von and Blok, H. P.—*Eine Weihung an die sieben Hathoren.* Prayers to the Seven Hathors and figures of the goddesses are carved on the remains of a rectangular slab in the Scheurleer Museum at the Hague. Four of the figures are preserved whole, the fifth and sixth in part, whilst the seventh has disappeared entirely. The prayers are for one Amenemhat, a "veritable first priest of Thoth." The sculpture may be assigned to the New Kingdom, and is the earliest dedication known to these goddesses.

Steindorff, G.—*Ein ägyptisches Grab in Siwa.* The rock tomb described in this article was one of those seen by the writer in 1899–1900. It is that of an Egyptian priest, Pa-Thoth.

Wolf, W.—*Über einige Waffen im Berliner ägyptischen Museum.* An almost unique ceremonial axe is described and illustrated, which was acquired by the Berlin Museum in 1925. The head is bound to the shaft by means of plaited leather straps. The head is not solid, but shows a lion chasing an antelope in open work. The only similar specimen known to the writer is in the British Museum (*Tools and Weapons,* Pl. 2, 91 = *Archaeologia,* LIII, 90), though similar axe-heads are not unusual. This type of axe was used in the wars of Thothmes III and survived as the standard ceremonial axe after it had been superseded in use. Two *'wn·t* clubs in the Berlin Museum are also described and

illustrated. Their ends are covered with coloured barks arranged in patterns. It is suggested that the patterns on similar objects (clubs and bows) should be carefully investigated, and that the barks used in them should be examined botanically in the hope of ascertaining the place of origin of this technique.

KLEBS, L.—*Der ägyptische Seelenvogel.* In the Middle Kingdom the soul was supposed to live on in the form of a bird, namely, the heron, stork, swallow, and peewit, which are migrants, and in the falcon and goose, which are not. The earliest soul-bird of all is the *ꜣḫ*, which the writer believes to be *Scopus umbretta*. This bird, which flies at dawn and sunset only and builds a three-roomed nest, would seem particularly suitable to embody the spirits of sun-worshipping kings.

DÉVAUD, E.—*Coptica.* (1) *Sur la substitution de* ϭ *à* ϫ *en bohairique.* As a general rule, ϭ replaces ϫ in Boheiric for Egyptian *g*, *ḳ*, or *d* when followed immediately by *l*, *n* or *r*. (2) *Sur les mots coptes* ⲟⲩⲓ (*B*) *et* ⲛⲟⲩϫ (*S.A f.B.*) *et leurs correspondants égyptiens.* In Egyptian and Coptic alike, one and the same word serves for "justice" and "truth" (in Egyptian *mꜣꜥ. t*, in Coptic ⲙⲉ (S), etc.). As regards words meaning the opposite, *ḏꜣ* serves for both "injustice" and "lie" in the New Kingdom. In demotic, however, a new word, *nꜥwd*, "lie," makes its appearance in place of *ḏ* in this meaning, and in Coptic ⲟⲩⲓ means "unjust" only, whilst the word "lie" is rendered by ⲛⲟⲩϫ.

L. B. E.

NOTES AND NEWS.

THE work of the British School at Gaza is fully dealt with in the article by Prof. Petrie in this number. The party engaged in those excavations were Prof. and Lady Petrie, Mr. and Mrs. Starkey, Dr. Parker, Mr. and Mrs. Risdon, and Mr. Harding.

Mr. Howard Carter and his able assistants continue the colossal task of clearing the tomb of Tutankhamen. The glittering treasure recalls the descriptions of the Arabian Nights, and imagination reels at the thought of the wealth and splendour which at one time surrounded the burials of those great Pharaohs who preceded this obscure boy-king.

Mr. Firth's finds at Saqqara show the extraordinary finish of the art and architecture of the IIIrd dynasty.

The tomb of Khufu's mother at Gizeh has proved a disappointment, since the sarcophagus was empty; but the objects found show the richness of the original burial.

The Egypt Exploration Society has sent two expeditions this season—one for excavating, under Mr. Frankfort, first at Tell el Amarna, and later at Abydos; the other, under Mr. Faulkner, is engaged in making a complete publication, by photography and hand copying, of the great temple of Sety I at Abydos.

Mr. Rowe and Mr. Yeivin have been working at Beisan, that very Beth-Shan to the wall of which Saul's dead body was fastened by the Philistines. The Egyptian objects found included two great triumph stelae of basalt—one set up by Sety I, the other by Rameses II. Below the temple built by Sety I there are remains of another temple in which scarabs of Thothmes III were found.

Prof. Petrie's lecture on "Recent Discoveries" will take place on Thursday, May 26th, at 2.30 p.m., repeated on Saturday, May 28th, at 3 p.m., and on Monday, May 30th, at 5.30 p.m., and his exhibition will be open from Monday, June 27th, to July 16th, 10 a.m. to 5 p.m. daily, and on evenings of July 6th and 15th, 6.30 to 8.30 p.m.

The International Congress of Orientalists will hold its meetings at Oxford in August, 1928. Further particulars can be obtained from the Secretary, Indian Institute, Oxford.